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raises the point whether they may be connected with a tendency to introversion.

An extensive bibliography concludes this useful book.

M. C.

Williams-Ellis, Amabel. *How You Began.* London, 1928. Gerald Howe. Pp. 91. Price 2s. 6d.

Walker, E. M., and K. M. *On Being a Father.* London, 1928. Jonathan Cape. Pp. 192. Price 5s.

Blatz, W. E., and Bott, Helen Mcm. *Parents and the Pre-School Child.* London and Toronto, 1928. Dent. Pp. 306. Price 6s.

HALDANE, in his introduction to *How You Began,* says he wishes he had written the book. There could hardly be greater praise. The facts are well and clearly stated, but too much of the book has that condescending attitude to the child's mind that is sentimental rather than scientific. But give the children this book, some frog-spawn, and a series of eggs from under a hen (even in a flat a broody hen and thirteen eggs is a possibility), and they will go out into the world wiser and richer.

The Walkers rightly insist that children should not be spoken to condescendingly in a cooing and dulcet voice. They were splendid to have thought of writing such a badly-needed book; and there is much sense in the introduction and the chapter " Early training." But page after page keeps silent about what is needed to be said. There is a prevalent idea that the maternal instinct is much stronger than the paternal; yet when a discussion arose in an international meeting of scientists there was general agreement that, in the best type, the instincts were about equal. We are perhaps in the process of developing real fathers. Lindsay wisely insisted that every child has a right to a father and a mother, only he must be ' the best type '—not the ' bossy ' person who provides sentimentality sandwiched between cash, antediluvian ideas, tempers, and peremptory orders. Mothers, rich or poor, must, when the children are young, stay at home a good part of their time if they are going to do their job well, so how welcome father could be if he would come home each night bringing bundles of big ideas and interests.

The Walkers say of child-birth (p. 99), " There is no time in the whole of his life at which a man is more conscious of his own futility and utter dependence on others." If they had only pointed out that this ought to be nonsense they might have swept away some of the cobwebs which make life unpleasant. Men, as well as children, are sensible when given a chance, and that chance they can get by reading seriously that excellent book, *Parents and the Pre-school Child,* where the importance of the real father is very obvious.

The essence of this book is (p. 60), " Government by maxims needs to be superseded by government by knowledge," and (p. 62), " It is important to recognise that conflicts between parents and children is just as fundamental a part of the relationship as is the attraction of love and sympathy." Much old prejudice must be dropped before we can get hold firmly of the truth and wide importance of that statement. In later life the parent should present this idea to the child, so that, hand in hand, they can weather the difficulties in a spirit of comradeship. But even these very sane educationalists insist (p. 61) that " The tendency of scientific thinking to-day is to discount the predetermining influence of hereditary factors and to put the weight of emphasis on early conditions of home life as largely controlling the success or failure of the individual." Perhaps when educationalists have followed up their cases for threescore years they may not be so sure of the all-importance of early influences.

O. A. MERRITT HAWKES.

PAMPHLETS

Charles Knowlton's Revolutionary Influence on the English Birth-Rate; The Place of John Stuart Mill and of Robert Owen in the History of English Neo-Malthusianism. Norman E. Himes.

THE title of the first of these two pamphlets explains itself. It shows that Knowlton's part in the diffusion of contraceptive knowledge, even in England, was greater than is generally recognized; and it gives much interesting and useful information by the way on the circulation of early contraceptive books and pamphlets. But it is a pity that Mr. Himes should have allowed himself to lapse into such an ill-substantiated statement as the following: ". . . theories to the effect that the [birth rate] decline has been due to mystical factors such as ' race physiology,' or to an increase in involuntary sterility, have never gained material acceptance with population authorities."

The second pamphlet, which, like the first, bears evidence of much research, shows that the connection of Owen with early neo-Malthusianism has at least been exaggerated, and that Mill's connection in early life was active, but in later life rather ambiguous and diffident.

E. M.

The Comparative Value of Current Contraceptive Methods. Norman Haire, Ch.M., M.B. Cromer Welfare Centre. Pp. 12. 1s.

DR. HAIRE, like practically all medical specialists on the subject, regards the Mensinga method as the most reliable and satisfactory one; and, although his patients have been of every class, he has found only a negligible proportion of women who could not or would not learn to use it. This, unfortunately, does not disprove that birth control is dysgenic, because a considerable percentage of women in the poorest class seek no advice on contraception. Dr. Haire is unduly critical of the other methods. He gives the impression that over half of the couples who rely on a chemical suppository or on a male method or on a cervical pessary (the pessary which Dr. Marie Stopes recommends is a cervical one) will have a failure within a few years! And doubtless in consequence of his too strong objections to the male methods (*coïtus interruptus* and condom), he ignores the consideration that if each partner uses a fairly reliable method, there can hardly be any failure—a consideration which might help the women living far from any doctor or nurse who could fit them with a mensinga pessary.

B. DUNLOP.

PERIODICALS

Archiv f. Rassen- u. Gesells. biologie

Vol. 20, Heft 4, contains an extensive study of Luxatio coxæ or congenital dislocation of the femur, by Dr. G. Hooff of Munich. Among 932 cases examined in the Orthopædic clinic in that city, 20 per cent. were familial. A number of pedigrees are given, extending through three or more generations. The condition is six times as common in the female as in the male sex. The character is regarded as an irregular dominant in inheritance, but a generation is frequently skipped. It is notably commoner in mixed than in pure races and may be produced by the union of several independent hereditary factors.

Dr. M. Madlener describes a hæmophilic family in which the inheritance is of the usual sex-linked type except that a hæmophilic female appears. Her father was hæmophilic, but none of her mother's ascendants nor descendants show the condition.

Prof. Ernst Rùdin has a general article on the prediction of mental derangements in offspring; and Prof. Fritz Kern another on the "Europeoid" peoples, which he classifies as follows: I Cromagnon (Galic), II Eurasian (Nordic, Mediterranean, Oriental), III Ostic (dark Ostic and light Ostic), IV Tauric (Vorderasiatisch and Dinaric, south of the Caucasus), V Nesiotic. He regards all Europeans as incomers from other lands, but who he should include in the Nesiotics is not clear.

R. R. G.

Bibliographia Genetica

IV, 1928. *The Cytology of Oenothera.* By R. Ruggles Gates.—*Oenothera* has been the pioneer genus in many fields of biological research, lending itself to the solution of a variety of problems, especially those of the correlation of genetical behaviour with nuclear phenomena. Consequently a vast number of papers have been published dealing with the cytological and genetical as well as morphological and systematic aspects. The intensive study of the genetics of the genus was begun by de Vries in 1886. It was not, however, until twenty years later that any cytological investigation of these forms was commenced. Several books have already been written, notably by de Vries in 1903 and 1913, Gates in 1915, and Lehmann in 1922, bringing together much of the work which had been done with the genus. The present monograph is, however, the only comprehensive account which has been given of the cytology of the *Oenotheras*. Nominally, this deals only with the work done prior to 1924, but in certain instances, such as the table of chromosome numbers of all known species and mutations, it is completed to the present time.

The process of mitosis in *Oenothera* is a fairly typical one. Morphologically the chromosomes are indistinguishable, but there is frequently a tendency for a certain amount of pairing to occur in the metaphase plate. Accounts have been given of varying numbers of chromosomes occurring in the somatic tissues. This, however, is only an apparent fragmentation really due to excessive destaining of the preparations.

The genus is characterized by its peculiar mode of meiosis. When the spireme segments, a number of chromosomes may remain connected end to end in a ring. At anaphase adjacent chromosomes of the ring separate, passing to opposite poles of the spindle. Each species, mutant and hybrid, is characterized by a definite and constant amount of pairing and such chromosome linkage. This linkage of chromosomes is probably responsible for the large amount of genetic linkage and much of the genetic behaviour which is peculiar to the genus. Indeed, "in the light of our present knowledge it appears that the *Onagra* group may all be regarded as ultimately hybrid in origin, their peculiar genetic behaviour and the fact that they breed essentially true being ascribed to the chromosome linkages which occur during meiosis." The chromosome linkages have formed a wide and important field of

research, which has opened up only since the work of Cleland in 1922. Hence its genetical possibilities are not fully considered in this monograph.

Although we possess detailed knowledge of the formation of the pollen grains, their structure and their behaviour in germination and fertilization, our knowledge of the female side is not quite so complete, owing chiefly to the difficulty of observing an abundance of nuclear stages in the megaspore formation. The development of the four-nucleate embryo-sac and fertilization have been ably described by Ishikawa, and much work has been done, especially by Renner, on the development and viability of the seeds.

From some of the earlier results with *Oenothera* has developed the vast subject of polyploidy and the realization of the evolutionary significance of chromosome number. For *Oenothera gigas* was the first tetraploid mutation to occur under controlled conditions, and in this genus the first triploid mutant was described. In *Oenothera* too certain other mutations arose which were later recognized as trisomic forms. The clue to their origin had already been discovered in the occasional irregular segregation of chromosomes in meiosis. In several cases mutations forming exact morphological parallels have arisen independently in two or more species.

It is impossible in so limited a space to do justice to the wealth of detail which has been brought together in describing the cytological phenomena which occur in the various plant tissues, both somatic and reproductive. Nor can we give any adequate idea of the problems, some of purely cytological significance and others of important genetical bearing, which are briefly yet critically discussed.

The volume also contains accounts of our present state of knowledge of the genetics of *Linum* (by Prof. Tine Tammes), of *Matthiola* (by Miss Saunders), of *Ricinus* (by Dr. S. C. Harland), of *Nicotiana* (by Prof. East), of canaries (by Dr. Duncker), of mice (by Prof. Cuénot), and of sterile cereal hybrids (by Dr. Bleier).

F. M. L. SHEFFIELD.

British Medical Journal

September 8th, 1928. *Mental Deficiency in South Africa.*—On May 10th, 1928, the Lower House discussed the necessity for dealing with the Union's increasing number of mentally defectives. It was pointed out that international conferences on immigration, held largely in Europe, sometimes under the ægis of the League of Nations, were rather over-balanced by emigrant-exporting countries, which were most concerned with keeping open-door for the less desirable inhabitants of overcrowded territories. It was announced that a grant of £4,000 had been made by the Carnegie Trust to investigate the "poor white" problem, including the relationship between mental deficiency and poverty.

Alleged High Fertility of Jews.—Dr. Sourasky shows that the Jewish birth rate has declined rapidly since the political emancipation of the the Jews, which was accompanied by a weakening of religious fervour, with a consequent disregard of Biblical injunctions. The fall has been rapid, and is in many cases much greater than the fall among non-Jewish communities, e.g.—

Births per 1,000 living

	Jews.	*Non-Jews.*
Berlin (1905)	17.7 ...	25.5
Frankfort on Main (1905)	16.2 ...	29.1
Prague (1901)	15.8 ...	31.3
Bavaria (1906)	18.2 ...	36.0
Prussia (1908)	17.0 ...	33.0
Bohemia (1900)	17.8 ...	34.9

Birth Rates in Vienna.

	Jews.	*Non-Jews.*
1900	22.2 ...	21.7
1923	13.5 ...	16.4

During the last two years the number of deaths in Vienna Jewry has exceeded that of births. In London, where indirect evidence only is available owing to the lack of denominational census, the same condition of affairs would appear to obtain as in other European cities, as evidenced by the fall in the birth rate in Stepney where Jews are crowded together, e.g.—

Birth Rate per 1,000 living.

	Stepney.	*Poplar.*	*Southwark.*	*London.*
1903	38.1	35.1	33.7	28.8
1927	18.3	19.8	19.0	16.1

The decline in the birth rate is thus 52 per cent. in Stepney as against 44 for London as a whole. Against the fact that the rate for Stepney is higher than that of London as a whole (18.3 as against 16.1) must be set the fact that Stepney harbours the poor amongst the Jews; so that when the presumably lower birth rate of the wealthier Jews is considered, it must be concluded that while the birth rate amongst poor Jews is lower than among the comparable non-Jewish population, the birth rate among Jews as a whole is as low as, and probably lower than, that of London as a whole.

September 15th.—A leading article supports Sir Thomas Horder in his contention that "the population question is one concerning which the medical profession has no right to demand that the public shall accept its views. . . . Similarly the community has no right to demand or expect guidance from the medical profession in matters which, though it may be competent to give advice in individual cases when they may arise, are in their broader aspects not strictly medical; in such matters the public must seek advice elsewhere." But the writer insists that there are two questions which the medical profession

should ask themselves. One of these is: Can any, even the best, of the contraceptive methods used lead to harmful results in the form of cervicitis or other physical disease? (Lady Barrett in her opening paper states that she has found these to result frequently.) The other question is: Does the prolonged use of contraceptive methods tend to produce permanent sterility, apart from the relative infecundity which is necessarily brought about by the postponement of conception to a later date?

September 29th. *Hereditary Dementia Praecox.*—Lt.-Col. W. S. Jagoe Shaw, I.M.S., although unable to give accurate statistics, is convinced that there is a much greater degree of dementia praecox amongst Parsees in India than amongst Mohammedans or Hindus, with whom it is comparatively rare. "The Indian Parsees are a sober and industrious race sprung from a small community of Persian refugees of the eighth century who have very rarely intermarried with outsiders or proselytized; their environment is far superior to that of most oriental races." He does not suggest that there were necessarily many schizo-phrenics amongst the original refugees from Persia, but that the original taint, in itself a very much less serious form of mental disorder, by its transmission through inbred generations to present-day Parsees might breed in them dementia praecox. Unfortunately, the Parsees are very reluctant to own to insanity in their own people, and Col. Shaw is certain that little further result can come of inquiry in this field unless it is carried out by a Parsee of an unusually altruistic type. He suggests that in the meanwhile the propriety of the abandonment of the custom of mating of cousins should be definitely considered by the Parsees.

October 6th. *Asthma.*—In a discussion at Glasgow Dr. James Adam stated that an analysis of 1,000 of his own cases showed that there was a family history of asthma or kindred trouble in about 25 per cent.; if heredity was the most important factor he considered that this percentage ought to be distinctly higher. Infection modified heredity to a marked degree.*

Falling Birth Rate.—Dr. H. M. Stephenson, referring to the discussion on this question at Cardiff in July, recalls the old Darwinian truism that the fittest survive. "The dog's fleas are as fit as the dog so long as they have a dog to feed on, and no longer. With civilization comes immediately the reversal of those laws that bring civilization into being. The feeble-minded and degenerate immediately become, in a Darwinian sense, the fit. . . . They are as fit as the dog's fleas, as fit as the dog—fitter, perhaps, than the dog who lacks the sense to scratch the fleas off him."

Abnormal Pigmentation of Scalp.—Dr. F. Parkes Weber suggests that the rare 'black-locks' of the hairy scalp are analogous to simple pigmented nævi of the skin elsewhere, while 'white-locks' are analogous to simple achromic nævi of any part—a form of congenital local albinism. But 'white-locks' may be due to the after-effects of alopœcia areata, or may be associated with vitiligo.

October 13th. *Glioma Retinæ.*—Mr. T. W. Letchworth of the Royal Eye Hospital records a family where the father had had his right eye removed as a child at the age of 2¼ years; and out of his four children, three have been affected by *retinal glioma,* two losing one eye each, and one losing both eyes and subsequently succumbing to a recurrence. He adds, "I fear this is only one instance of what the progress of surgery and medicine is capable of doing for man by preserving individuals suffering from an hereditary taint, who would in the ordinary course of nature be eliminated."

November 3rd.—Mr. W. S. Syme, of Edinburgh, records the case of a father who, having had one eye removed for *glioma retinæ* at nine months, procreated four children, of whom two died of the same disease—the father himself dying of multiple intercranial new growths at the age of 27. It is noteworthy that the father absolutely refused operation on his two children—"but perhaps from the racial, if not from the individual, point of view, he may have been wiser than we were."

October 27th. *Diabetes Mellitus and Heredity.*—Prof. P. J. Cammidge in an important article gives the results of his experimental breeding of mice, and his observations on human pedigrees. He finds that in mice high blood-sugar acts as a Mendelian recessive. In human beings there are, however, two forms of diabetes mellitus. One acts as a Mendelian recessive, the other as a dominant. The recessive form occurs most commonly before the age of 40, and is the more serious; the dominant occurs in later life, and is almost invariably mild. But as there is a tendency for both varieties to develop earlier in successive generations, the age is not a reliable guide as to the nature of the inheritance. The recessive form having a high mortality, tends to be self-exterminative, so that the dominant form appears more prominently in statistics on the heredity of diabetes. Hence the common belief that heredity is a favourable sign in diabetes. It is not clear whether the inherited factor is itself the determining cause of diabetes, or whether it merely predisposes to the development of the disease by subsequent illness or injury. It is possible that the diabetes of young people may arise from inherited defects of the recessive type, which prevent the development of the organism in a particular direction keeping pace with the increasing demands of the growing body. The benign form of diabetes, so common in Hindus,

* It is not yet known whether asthma is one complaint or a symptom common to many.—Ed.

Japanese, and Jews, probably depends upon an inherited dominant strain developed in a lifelong adherence to an improperly balanced diet. Prof. Cammidge adds that there is not sufficient evidence to show that an inherited factor is a necessary basis for the development of glycoxuria and diabetes in all cases. But " the marriage of diabetics is clearly inadvisable, and intermarriage between families where there is even a remote history of the disease is to be discouraged."

A. A. E. NEWTH.

Eugenics

THE multiplicity of periodicals is a modern bane, and one hesitates to welcome any addition to the flood. Here, however, is something really needed—a responsible monthly journal devoted to practical eugenics. Too long have the existing journals (including the REVIEW) laboured under the double burden of initiating practical eugenic measures and publishing and supporting research. The two functions are—or rather, should be—distinct; and we heartily congratulate the eugenists of the United States in having thus got ahead of us in this country.

Eugenics (whose text, by the way, from Galton is the same as ours) is published by the American Eugenics Society on the 25th of each month. C. C. Little, Henry P. Fairchild, Roswell H. Johnson, Ellsworth Huntington, and Leon Whitney are therefore intimately connected with it. It is pleasantly printed and illustrated, and contains news, articles, reviews, etc., which are ' popular,' but sane and balanced. Among other articles in the first number (October) is one by D. P. Murphy on the " Eugenic Aspects of Pelvic Irradiation Therapy." It seems fairly clear that the treatment if given after conception has (in a proportion of cases) bad effects upon the child. It is doubtful whether it affects the children when given before conception. Research is in progress. In the December number the announcement is made that Arkansas has followed Tennessee in forbidding the teaching of evolution in the schools

E. M.

Genetica

Vol. XI.—This volume contains a reprint of a lecture given by Prof. Nilsson-Ehle to the International Federation of Eugenic Organizations at Amsterdam in 1927. Prof. Nilsson-Ehle's thesis is that to talk of race *improvement* by crossing is misleading. He considers a cross of the type Ab × aB (Punnett and Bailey's well-known Sebright-Hamburgh cross in poultry is an admirable example) and points out that for every positive new combination, AB, (*ex hypothesi* the improvement) there is a corresponding negative new combination, ab, which is presumably worse than either of the grandparents; crossing, therefore, leaves the *average* unchanged. While this generalization clearly cannot always hold for characters determined by one or two factors, where the number of factors is large, it is most probably valid. But it is doubtful whether this principle (even if it be sound) is of much consequence in the controversy as to the desirability of crossing races. Other considerations—such as the appalling social consequences of race mixture as can be seen to-day in America—are predominant. But even if we neglect such social considerations, surely Prof. Nilsson-Ehle's principle overlooks the fact that Sodom owed its destruction not to any *average* degree of criminality, but to its inability to produce ten righteous men. The salvation of mankind (as has so frequently been pointed out) depends not on the average, but on the rare outstanding personalities. Granted that a race cross may produce as a negative new combination (to use Prof. Nilsson-Ehle's phraseology) a criminal or a feeble-minded (the especial bug-bear of eugenists), what would this matter to civilization if the corresponding positive new combination were, say, another Copernicus or even another Dumas (to cite the best known case of hybrid genius)? The greatest possible caution must always be exercised in translating the generalizations of the pure science of genetics to the applied art of eugenics.

M. S. P.

Journal of Criminal Law and Criminology

WITH the May (1928) number of this journal was issued a massive supplement, *A Study of the Indeterminate Sentence and Parole in the State of Illinois*. Though a valuable contribution to the literature of crime, it naturally only touches the eugenic aspects indirectly. There is a passing reference, however, to a finding of Dr. Herman Adler that the criminal and delinquent group in Illinois contained a no larger proportion of those of inferior intelligence than did the normal population. If this finding, which is the exact opposite to the situation in England, is reliable, it shows that the American criminal is drawn from an unusual class.

On the other hand, a table in the August number shows that about 27 per cent. of the inhabitants of five big American prisons were feeble-minded. But, as the author of the article, C. O. Weber, says, " mostly the stupid offenders are caught." Murchison, it will be remembered, came to the conclusion that the intelligence of criminals rather tended to be superior to that of the American army. The truth is that no criminal statistics are satisfactory, and that

American figures are rendered more than usually unreliable by the heterogeneous and frequently unadjusted character of the population. Moreover, the American tradition runs towards the making, rather than the respecting of laws. Both tendencies, unhappily, seem to be now on the increase in England.

E. M.

Journal of Genetics

Vol. II, 1928. *Polymorphism in the Moth Acalla comariana Zeller.* By J. C. F. Fryer.—The genetics of polymorphic butterflies and moths is a subject upon which comparatively little still is known, in spite of its very great interest for evolutionary theory. Mr. Fryer's earlier researches have done much to clear up the specially interesting case of the tropical butterfly, *Papilio polytes*; and the present study is devoted to a moth, common in parts of England, known as the Strawberry Tortoise, which shows at least seven major distinguishable forms. In the scheme of inheritance to which Mr. Fryer has been led by the breeding experiments here reported, six of these are ascribed to the action of two Mendelian factors, one trimorphic and the other dimorphic, which however appear to be so closely linked as to give the effect of a single polymorphic factor. The difficulties of breeding Lepidoptera experimentally appear to be great, and the experiments do not yet include all the genotypes which should be possible on the theory adopted, apart from the fact that no place has yet been found for the form *Fuscana,* which seems to be common in Lancashire. The preliminary conclusions reported in this paper should none the less provide an admirable basis for the more exhaustive experiments which it is to be hoped will be carried out now that the ground has been cleared.

Sexual difference of Linkage in Gammarus Chevreuxi. By Prof. J. S. Huxley.—The author had previously shown that the mutants b and c for red and albino eye in the shrimp *Gammarus chevreuxi* were linked. The present paper gives more conclusive tests, based on back crosses, in which it is possible to examine crossing-over in the two sexes separately. In the male there is only about 25 per cent. crossing-over, while in the female it is almost exactly 50 per cent.; the agreement between the coupling and repulsion series being extremely close in both cases. The paper contains a valuable discussion of the evolutionary value of reduced crossing-over in the heterogametic sex, which had led Huxley previously to foretell, what has since been established, that this sex is the male in *Gammarus.*

Amputated, a recessive lethal in cattle, with a discussion of the bearing of lethal factors on the principle of livestock breeding. By Chr. Wriedt and Otto L. Mohr.—This is a new semi-lethal in cattle, causing death immediately after birth. The authors state that seven such recessive lethals are known to them. The introduction of the gene into Sweden is traced to a particular bull imported from Germany in the early nineties, who became the most prominent sire in the entire Swedish breed of Holstein Friesians. The gene is now very widespread. The authors remark: " The breeding of Swedish Holstein Friesians has been managed in an exemplary manner, according to the breeding principles now prevailing, and the result has been that the breed is now thoroughly imbued with two very undesirable sub-lethal genes."

As practical remedies the authors emphasize the importance of testing sires by matings to at least twenty of their own daughters, though for particular and known lethals this process could be simplified by using dams known to carry the defect; and in the second place a system of recording still-births and monsters. It is emphasized that such lethal genes are of far more frequent occurrence in livestock than has been previously suspected.

R. A. Fisher.

Journal of Heredity

Nov., 1928. *Detection of Heterozygotes with X-Rays.* By Robert T. Hance.—This is a useful piece of research which should prove capable of wide development. A number of homozygous agouti and heterozygous (agouti x albino) mice, which are normally indistinguishable from each other, were submitted to X-rays—a treatment which causes the hair to fall out. The hair which grew afterwards on the backs of the heterozygous mice came in the proportion, approximately, of 3 to 4 white hairs to 1 agouti hair. But on the homozygous mice, though there were a few white hairs, most of the new hairs were noticeably darker than normal. In short, the pure homozygote is indeed " physiologically stronger " for that particular character than the impure heterozygote, which at first sight appears to be its counterpart. To be able to distinguish a pure dominant from an impure without prolonged breeding tests is a valuable genetic advance.

Genealogical Correlations of Student Ability. By Howard J. Banker.—This is a useful parallel to Galton's investigation of the correlation between the Tripos achievements of fathers and sons. Mr. Banker was fortunate in finding a school (in America) with a long record of continuity in teaching and teachers, and situated in a district with a comparatively stable population. He was thus able to compare the records not only of sibs, but of parents and children (both sexes). To do this, he devised a " Student's

Ability Index," based on a combination of the individual's progress through the school curriculum with the teacher's marks given day by day —a rough measure, but probably statistically satisfactory. He was able to find thirty-eight families in which this index could be computed for both parents and for one or more children, giving a total of eighty-three children. While, as he fully realizes, these numbers are small, the results seem to justify reasonable confidence.

A mid-parent SAI was calculated from the average of the SAI of father and mother, and correlated with the SAI of the children. The coefficient of correlation obtained was .4999 ± .0555—positive and statistically significant, being nearly ten times the probable error. As a check, the mid-parent SAI's were correlated with the SAI's of the children of other families in the list, and yielded a coefficient of — .1172 ± .0703. In other words, there was no correlation between unrelated individuals. The article should be read, since many other important kinship correlations were calculated, and compared with the correlations arrived at by Pearson and Lee on human stature. The similarity of the results is striking, and shows that blood-relations tend to resemble each other as much mentally as they do physically.

E. M.

Medical Officer

Dec., 1928. *Ascertainment and Classification of the Mentally Subnormal Child.* By A. A. E. Newth.—This is an article which should be read by all interested in the practical side of negative eugenics. It is a clear and well-written account of the methods adopted in Nottingham, where Dr. Newth is Senior Assistant School Medical Officer, and where there has for long been an enlightened attitude towards subnormal children. While admitting that the Ballard one-minute intelligence tests and the Stanford revision tests of Terman are not perfect, Dr. Newth nevertheless comments that they " certainly give the examiner a very valuable and surprisingly accurate estimate of the patient's abilities, and it is remarkable how seldom he differs from the teachers as to the results." One rather wonders whether a euphemistic title, such as " extra standard VI," should be given, as he recommends, to the special class for backward children. It may flatter the children and their parents for a short time, but before long they will realize its real meaning, and a new euphemism will have to be found. Meanwhile, a good label has been hopelessly debased, as " Institution " and " Infirmary," in succession to " Workhouse," have been debased. There are too many other good words which have been lost to the language through use as euphemisms. Dr. Newth, out of his fund of practical experience, strongly insists on the eugenic aspect of the problem of the subnormal child. E. M.

Medizinische Klinik

No. 18, 1928. *Uber die Vererbung einer branchiogenen Fistel.* By Professor E. Starkenstein.—An interesting little pedigree is given of a curious trait occurring in the family of the author, which he puts down as branchiogenic fistula, appearing just in front of the first fold of the ear. It has appeared in five generations, showing dominance. Consanguineous mating was not sought for in records extending in the direct line back to 1450 and collaterally back to 1350. There appears to be no sex linkage. In the first family one case is known five generations back; in the second generation there were three cases, one without the trait, and one unobserved. In the next generation we have seven members with the trait, four known to be without it, and one unexamined. In the third generation there are again eight cases, but no case of the trait being transmitted through one of those members of the previous generation who do not show it. In the generation now growing up one affected person has one child who shows the trait.

There have been noted a few members of the family showing this fistula on both sides of the face. At times it has only appeared as a little lump, but in other cases the lump has opened, showing matter formed by degeneration of cells. This usually dries up at puberty, leaving only a little pit.

C. B. S. H.

Metron

June, 1928. *Alcuni Dati Demografici Sugli Esquimesi.* By Giorgio Carega.—This important article contains a very complete account of our present knowledge relating to the Esquimaux, and presents many points of eugenic interest. The early history of Greenland is recorded, and the immigrations of the Norse peoples and of the Esquimaux to that country are described. The result has been a certain admixture of races which in the past and in the present has had important consequences. The population of Greenland has been at all times scanty. According to the author, the population of North and South Greenland was approximately 6,046 in the year 1805, and 13,953 in the year 1924. There has thus been a considerable increase, although epidemics, especially smallpox and influenza, attributed to contact with Europeans, have at various times played havoc with the inhabitants. The birth rates and the death rates are both high. The pure Esquimaux show a deficient resistance to infective disease and tend to decline in numbers, while the mixed breeds show more resisting power and tend to increase.

It would seem that the influence of climate is indirect rather than direct. During the long winter there is a scarcity of food and a life of enforced inaction, resulting in a certain degree of lowered vitality. Tuberculosis is rife. In the period 1861-1901 of 100 deaths 30 were attributed to this cause. Bronchial and intestinal affections are common and also cancer. An important element in the tables of mortality is the mortality from accidents arising in the pursuit of food animals. The average duration of life is short. Infant mortality is high—about twice the rate in Sweden, with which the author compares it. He inclines to the view that the pure Esquimaux breeds show a certain degree of racial declension, which is held in check by two factors, viz., the policy of the Danish Government, and the mixture of races. The Danish Government pursues an enlightened policy to which the author gives just praise. Europeans are instructed to treat the indigenous inhabitants with equity, sympathy and indulgence. Their customs and practices are not to be interfered with. A certain amount of local autonomy is established.

Financial aid is given to the poor, to labourers in temporary need, to widows and orphans. The importation of tobacco and alcoholic liquors is forbidden or strictly controlled. Severe measures are taken to prevent the spread of venereal diseases. A medical man is assigned to each district, whose duty it is to visit all the inhabitants in his area at least once a year, to secure general vaccination, to distribute medicines, and to discuss problems of hygiene. Courses of instruction in medicine are given to young students who take the place of the doctor in his absence. Housing conditions receive attention. The author thinks that the Danish Government shows a greater solicitude towards its Esquimaux subjects than either Great Britain or the United States. He holds that on the whole the pure Esquimaux breed tends to disappear, due to inferior fertility and high mortality, but that the mixed races have a better future before them.

The article also contains useful information regarding Labrador, and a warm tribute is paid to the self-denying labours of Grenfell and of the Moravian and other missionary societies.

Aristocracies and Mental Evolution, or Social "Conification." By Frederick Adams Woods.—The author proposes to establish the thesis that "there are forces at work tending to improve the biological quality of the extreme upper portions of the social structure." Aristocracies, whether social or intellectual, may be pictured graphically as occupying the top of a somewhat cone-shaped diagram, the base of which is formed by the proletariat. If the social structure becomes more aristocratic the cone becomes higher and more finely pointed at the top. The process may be called *conification*. The theory of "social conification" depends on several biological and sociological considerations, viz. (1) superiority tends to rise, (2) superiority tends to be inherited, (3) those who push their way up in the social scale tend to mate their offspring within the group to which they have risen. Some of the sons exceed their fathers, and so push higher still. Worldly ability is correlated with the attainment of power and riches. Pride of family and the inheritance of property lead in the same direction. Within the upper group the superior members leave more adult offspring than the inferior. These are the main positions which the author sets out to sustain.

He takes the *Dictionary of National Biography* and finds the following facts, viz. (1) In the main body of the work it appears that of those specially eminent 11.7 per cent. were the sons of craftsmen, artisans, and unskilled labourers. (2) The supplementary volume, dealing mainly with those born in the first quarter of the nineteenth century, shows a smaller percentage descended from these same classes, viz., 7.2 per cent. (3) In the second supplement, containing the names of those born during the second quarter of the nineteenth century, the author found the percentage born from the same social classes as low as 4.2 per cent.

A similar phenomenon of "conification" may be observed in New England, and especially in Boston and its vicinity. The great majority of the colonists belonged to a middle-class known as yeomen. There were practically no paupers, criminals, or defectives. There were no very rich or powerful families. As time went on there was a change. Able men acquired fortunes and left those fortunes to their sons. A class system developed. Marriages tended to be confined to members of one social grade. The process of "conification" went on. Caste formation proceeded in the United States during the last century. In Massachusetts there is ample evidence that the socially prominent classes have produced much more than their share of notable men.

The author collects a considerable amount of evidence both from England and America which tends to show that fecundity has some relation to ability and practical success and achievement.

Some interesting results are obtained by an analysis of the British peerage. It is found that 412 members of the House have never spoken in debate. The average attendance since 1918 has been 56, and only on six occasions since then have more than 250 voted in a division. On the other hand, 242 peers own eight million acres in Great Britain and Ireland, representing the landed interest. Two hundred and seventy-five are directors of business organizations, such as insurance companies, banks, railways, engineering and shipping companies. About 10 per cent. of the peers have gained their elevation primarily

through business channels. Four-fifths of the peers have some measurable public service to their credit. The above facts tend to show that the British nobility is still active, intelligent, and powerful in a social and financial way.

How far in these matters heredity and environment are interwoven is difficult to say. Achievement is more highly correlated with social position than is pure intelligence. Royalty has a high record of achievement, but mainly as generals, organizers, or administrators, very rarely as poets or writers. Nobles have a considerable record as soldiers, politicians, administrators, philosophers, poets, scientists, writers, but rarely in the arts, strictly speaking—that is, where manual dexterity comes in as a necessary qualification. Only rarely have the nobles any skilled artisans in their immediate ancestry.

" In most cases," says the author, " it is impossible to estimate the part played by opportunity in bringing to fruition the hidden seeds of genius. Even here one might argue until doomsday over each case separately or all of them together." He quotes Lewis M. Terman as holding " It has often been argued that this superiority in achievement should be credited for the most part to the larger opportunity for achievement enjoyed by members of the favoured classes. Our data show that individuals of the various social classes present these same differences in early childhood, a fact which strongly suggests that the causal factor lies in original endowment rather than in environmental influences."

Probably this position is sound. Heredity is potent.

J. A. L.

Nature

December 22nd, 1928.—There is here a leading article reviewing the whole question of ' Fundamentalism ' in America. Evidently anti-evolution beliefs and sympathies are there more widespread than we in this country had thought. In particular, the article refers to the " overwhelming majority " by which Arkansas has passed a law forbidding the teaching of evolution in all tax-supported schools. " Furthermore, it is believed in well-informed circles in the United States that if similar anti-evolution laws were submitted to popular referendum in every other available State, the result would in every case be the same under present conditions."

It is difficult to think that this is really so. At the same time, there is great need, here as well as in the U.S.A., for scientists to hear the plea of *Nature,* and " to leave the laboratory bench and go out into the wilderness preaching the gospel of truth and progress."

There is also a long review-article by Professor Karl Pearson on Crew's *Organic Inheritance in Man* and Guyer's *Being Well-Born.* It is somewhat patronizing and highly critical. But, though the criticisms appear at first to be directed at the two particular books, they clearly spring from a fundamental distrust of Mendelism as a rival of the biometrical study of heredity—a rivalry which, as Fisher has showed, does not and should not exist.

A short article on cancer research suggests that while the disease may be local at its inception, " a factor of general susceptibility or resistance also plays a part." There is some slight evidence, too (from mice), that individuals which have had cancer and successfully recovered after an operation, are thereafter more generally resistant.

December 29th.—A leading article by " A. M. C.-S. " reviews, in a characteristically low, even tone, the population problems which daily confront the eugenist and others. Very welcome are his remarks on the connection between population and unemployment, particularly, " It must be remembered that a further decline in the birth rate in Great Britain will not affect the employment position until fourteen years have passed. It does not seem unreasonable to hope that within that period we can get our population employed up to the pre-war level." In fact, it may be added, whatever the arguments against a dense population—and they are many and good—unemployment is not one of them. A nation *cannot* adjust its population to the fluctuations of its industries, but it might make an effort to do the reverse.

A. M. C.-S. looks forward, clearly without regret, to the not very distant time when the population of this country will be stable, if not declining; and he is even mildly hopeful about the differential birth rate—remarking incidentally that the eugenic reason is not the sole one for deploring the present situation. There are also " the obvious grounds that those parents who by reason of their financial position are best able to provide children with a good upbringing and a decent education have the smallest families." His hopefulness is caused by Dr. Edin's discoveries in Stockholm and by recent somewhat similar evidence from Holland and Germany.

E. M.

Quarterly Review of Biology

September, 1928. *Criteria for Distinguishing Identical and Fraternal Twins.* By Taku Komai. —The principal methods employed in Europe for distinguishing the two types of twins are discussed, and it is pointed out that some of the criteria here available fail among the Mongolian race, in which the hair colour and form, eye colour, and skin colour are subject to only a slight variation. The writer has made extensive

tests of the degrees of resemblance to be found in the friction ridges of the soles, palms, and finger tips, and expresses the opinion that use can be made of these characters, at least in conjunction with the other criteria available. The best criteria are, however, still somewhat uncertain. The data on which the conclusion is based are not given.

The Gene. By R. Goldschmidt.—The term *gene* was introduced by Johannsen to express briefly the modern genetical concept of the relatively stable heritable particle, which can be recovered unchanged after a number of generations of breeding, and to which the phenomena of Mendelian inheritance can be ascribed. Genetics can only study the effects upon the course of development, or upon the final product, of changes in the gene content, of which the simplest type is the substitution of one gene for a second gene (allelomorphic to the first) in the same locus. The bodily and developmental changes produced by these gene substitutions are of the most varied kind; sometimes of a simple character, such as the presence or absence of pigment, but frequently including such changes as the forking of hairs or the shape of the wings. On the most definitely mechanistic view, all that can be inferred is that the genes are chemically different and in consequence play a different part in the complex *reticulum* of chemical activity which is called normal development.

The absolute paucity of real knowledge, however, on the nature and action of the heritable particles, in tantalizing contrast to the perfectly clear evidence of their existence and arrangement, naturally does not prevent the elaboration of theories of the gene; which are, however, little more than statements of our present state of knowledge (or ignorance) in the most generalized and abstract terms. The land is so bare that one could scarcely think it possible to find ground for disagreement, yet Professor Goldschmidt contrasts his own "theory of balanced action of the gene" with Bridges' conception of "genic balance," and concludes that the latter can only be endowed with concrete meaning "if we take the step from the balanced genes to the balance of the action of the genes." Evidently Dr. Bridges ought to take this step at once!

R. A. FISHER.

Rationalist Annual

1929.—This is a good number, with several articles of indirect interest to eugenists. Sir Arthur Keith contributes a lightly-written account of a little study of his own on the mentality of Englishmen. Assuming that newspapers substantially represent the tastes of their readers, he set out to discover the proportion of space devoted to various important subjects in five different journals—three morning papers, one "respectable," one "bought by millions," and the *Manchester Guardian,* in the *Evening News,* and in the most widely read Sunday paper. The three predominant interests (with slight individual variations) he found to be (1) Business and Industry; (2) Sport; (3) Law, Police, and Accidents. Space devoted to "intellectual matter" (in which Sir Arthur included serial stories!) varied from 5 to 13 per cent.; Science scored between 2 and 4 per cent., and Religion from 0.7 to 1 per cent.

A stimulating and provocative article is J. B. S. Haldane's *The Origin of Life.* It shows biochemistry as the link between genetics and general biology on the one hand, and physics on the other; and it is exceptionally clearly written. Since there are only about as many atoms in a cell as cells in a man, he assumes that the link between living and dead matter is somewhere between a cell and an atom. That link he takes to be something of the nature of a filter-passing bacteriophage, which "is a step beyond the enzyme on the road to life, but it is perhaps exaggeration to call it fully alive." It may be described as a gene outside, instead of inside, an organized and living cell. When the earth was young and the primitive oceans of "the consistency of hot dilute soup," chemical conditions favoured the manufacture of organic substances and eventually of these semi-living genes. Again, after the lapse of ages, some of these succeeded in combining into a cell.

He also concludes (for reasons too long to detail here) that all life has sprung from one cell. It is very useful to have his final statement that these and other speculations on the historical origin of life leave the question of mind and matter precisely where it has always been.

E. M.

Revue Anthropologique

July-Sept., 1928.—*De L'Utilité des Études Généalogiques au point de vue de l'Herédité.* By M. André de Lachapelle.—This is a somewhat rhetorical plea for a study with which all interested in eugenics must necessarily be in sympathy. The author very justly indicates some of the obvious difficulties from the biological point of view; the uncertainty of filiation in many cases, and the worthlessness of documents in the solution of this problem; the exaggerated emphasis which writings of all kinds are apt to lay on the best side of a given descent, the worse elements being discreetly overlooked.

Incidental reference is made to a point which is, however, hardly stressed enough, namely, the undue attention habitually paid by genealogists to the direct male line, which clearly becomes of less and less biological significance

the further back it is traced. It is, moreover, subject to the filiation doubts in a way in which the direct female line is not; but the latter is seldom given any consideration in genealogical works.

The author most rightly puts in a word for the better working-class descents, a subject to which very little attention is paid. Genealogists do not as a rule think it worth while to attempt to surmount the difficulties involved, while biologists are apt to pay attention only to those connections which show the worst and not the best effects. Reference is made to families in which specialized talents have been handed down, but it is not indicated that such are the rare exceptions, and that general ability persists far more often than specialized skill. In a minor degree, no doubt, such skill may continue for a long time, but it is the skill of the artisan rather than that of the artist.

The author's style is shown at its best in his philosophical reflections on the innumerable changes, chances, and happenings which have combined to produce any one individual of the present day. " Tout homme est le produit et le résultat, l'œuvre d'une multitude, d'un veritable peuple, d'un monde!" and again, " Si le moindre chainon de notre ascendance aux innombrables mailles eût été changé, notre ligne eût été toute differente, notre étoffe humaine eût été rompue."

The article is, in short, brilliantly written and highly suggestive, though perhaps little is added to the strictly scientific treatment of a fascinating subject.

W. T. J. G.

Scientia

July, 1928. *Le sexe en tant que facteur de l'evolution organique. 1ere Partie: La devision reductrice.*

August, 1928. *2eme Partie: La symbiose des generations alternantes.* By M. Navachine.—In these two articles an account is given of the part played by sex in the evolution of the higher forms of plant life. Sex, the writer concludes, though not essential to reproduction, is essential to evolution. In support of this he quotes the moss plant in which the asexual generation closely resembles the ancestral alga, whilst the sexual generation is typical of the land flowering plants. While no one would dream of questioning M. Navachine's botanical facts, his zoological parallels are far from happy, and one must conclude that evolution in plants and animals has proceeded along very different lines.

PETER GRAY.

Sociological Review

October, 1928.—*A Comparative Study of Unemployed and Employed Boys.* By D. E. R. Hughes.—Everyone interested in the problem of unemployment ought to read this valuable study of groups of Liverpool boys. It shows beyond shadow of doubt that whatever may be the industrial and economic causes of unemployment, the human factor is extremely important.

By every criterion of human worth and citizenship the unemployed boys made a poorer showing than the employed. In the " Brightness " test (Otis Intelligence Scale) 1.2 per cent. of the unemployed were in the first rank, while there were 4.9 per cent. of the employed (a group of boys from the top forms of a secondary school, incidentally, had 95.1 per cent. in this category!). Many more of the employed than of the unemployed were members of clubs at the time, and still more had at some time been under club influence. More of the employed, though they had less time, used free libraries, and—which is rather interesting—fewer smoked. Mere finance may account for the fact that they also went more often to the ' movies.' Though the two groups were drawn from the same area, there was a marked difference in housing conditions. The average number of persons per sleeping room was —Unemployed, 1.43; Employed, 1.19. Of the latter 30 per cent. had baths in their homes, and of the former 20 per cent. The proportion of those who had savings was much higher among the employed than the unemployed—among the latter, indeed, it was negligible.

E. M.

CORRESPONDENCE

A Correction

To the Editor, Eugenics Review.

SIR,—In the notes of the EUGENICS REVIEW appearing in the October number, page 154, I am represented as having shown that the incidence of Tuberculosis in London has lately risen.

I am not responsible for such a statement. What I pointed out at Bath in *Public Health* (August, 1928) was that " the Tuberculosis mortality rate for England and Wales since 1870 gives a curve which shows a distinct though slight retardation in the rate of drop of mortality."

The same point for Scottish mortality between 1871 and 1923 was made at the same meeting by another of the four speakers.

Yours faithfully,
W. M. WILLOUGHBY,
Medical Officer of Health.

Corporation of London,
Public Health Department,
Guildhall, E.C.2.
November 5th, 1928.

[We much regret the error, which was due to a misunderstanding of some private correspondence with Dr. Willoughby.—Ed.]

to see that Mr. Armstrong agrees that it would be a very strong argument; and there is little doubt that when the veil of hypocrisy which still invests the population question is torn aside, it will be used. But Mr. Armstrong, like most others, has not grasped the population question when he speaks of certain countries of the New World having territory in excess of their needs, and of having made no attempt to limit their birth rates. Over-population soon makes its appearance if births are not restricted, even in the newest and most fertile countries; as land has to be cleared and brought into cultivation; and an unrestricted birth rate, *which would cause a fifty-fold increase of population in a single century,* cannot be coped with under the most favourable circumstances. Australia and New Zealand—two of the most favoured lands on the earth—appreciated this sufficiently to bring their birth rates down from over 40 to about 25 per thousand, soon after Mrs. Besant's *Law of Population* was circulated there; and rejected attempts to suppress this book and the sale of contraceptives. It is the new and comparatively thinly populated nations of the world to-day that appreciate the morass into which the Old World has fallen by its neglect of the population problem, and have resolved to take time by the forelock and keep breathing space for their descendants. The peoples of the whole world to-day are eager to adopt birth-control, and their "selfish interests" are leading them to a far sounder statesmanship than is shown by any of their leaders. The period of transition must needs be an anxious one, and will present certain undesirable features, but they can only be obviated or mitigated by recognizing the absolute inevitability of the new dispensation and seeking to guide it wisely, by precept and example rather than by "control."

Yours, etc.,
C. V. DRYSDALE.

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